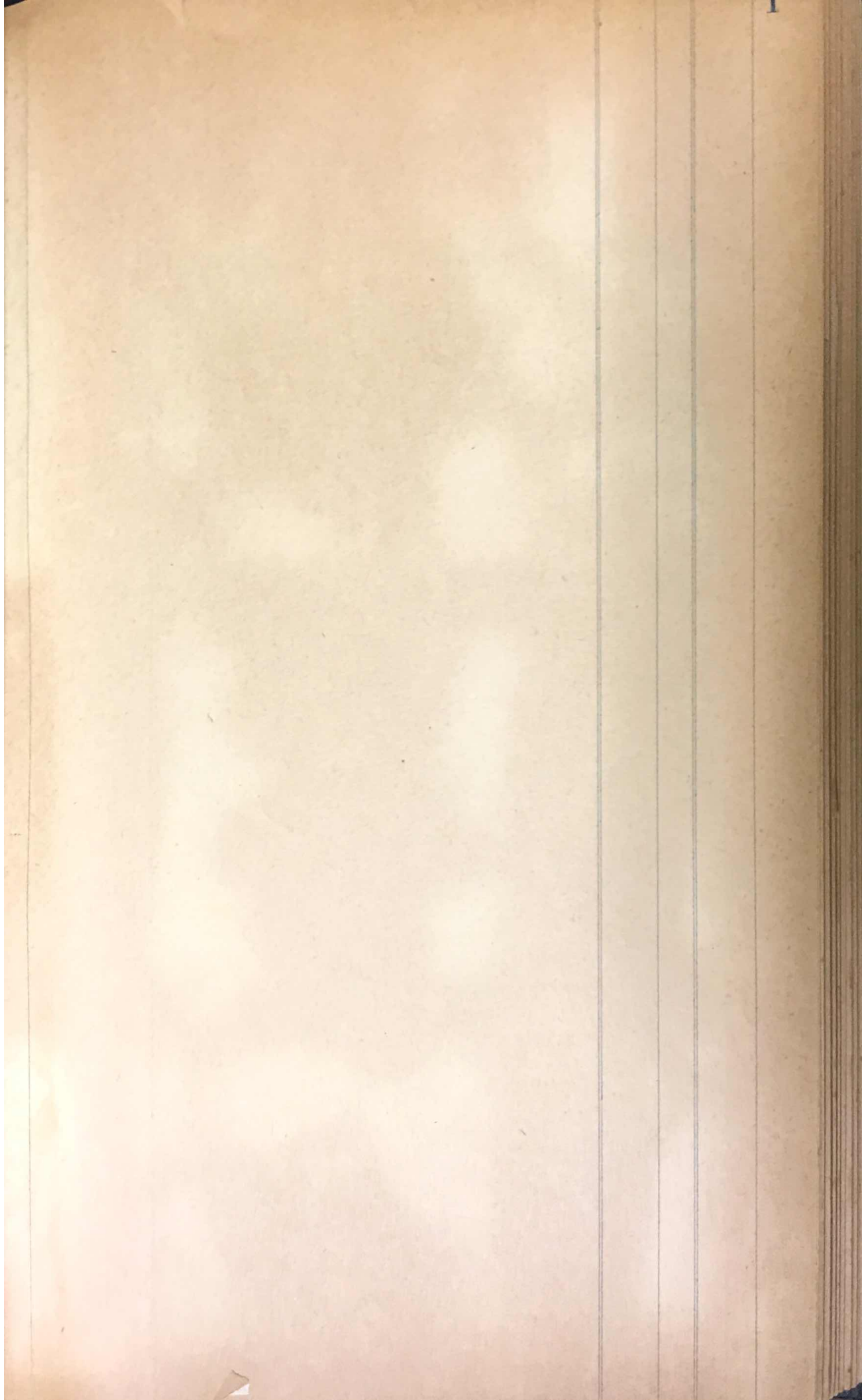


*Am. M. M.*

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*Courtesy of Peabody Museum, Harvard University*

*Plate CIV—Atlantic Terra Cotta*

**Lintel No. 2  
Piedras Negras**

*Beautiful bas-relief in stone*

Evidently an officer of high rank, with his Adjutant and Generals  
From the Original in Peabody Museum, Harvard

*From Maya Architecture  
By George Oakley Totten*



*Maudslayi*

*Plate CIII—Atlantic Terra Cotta*

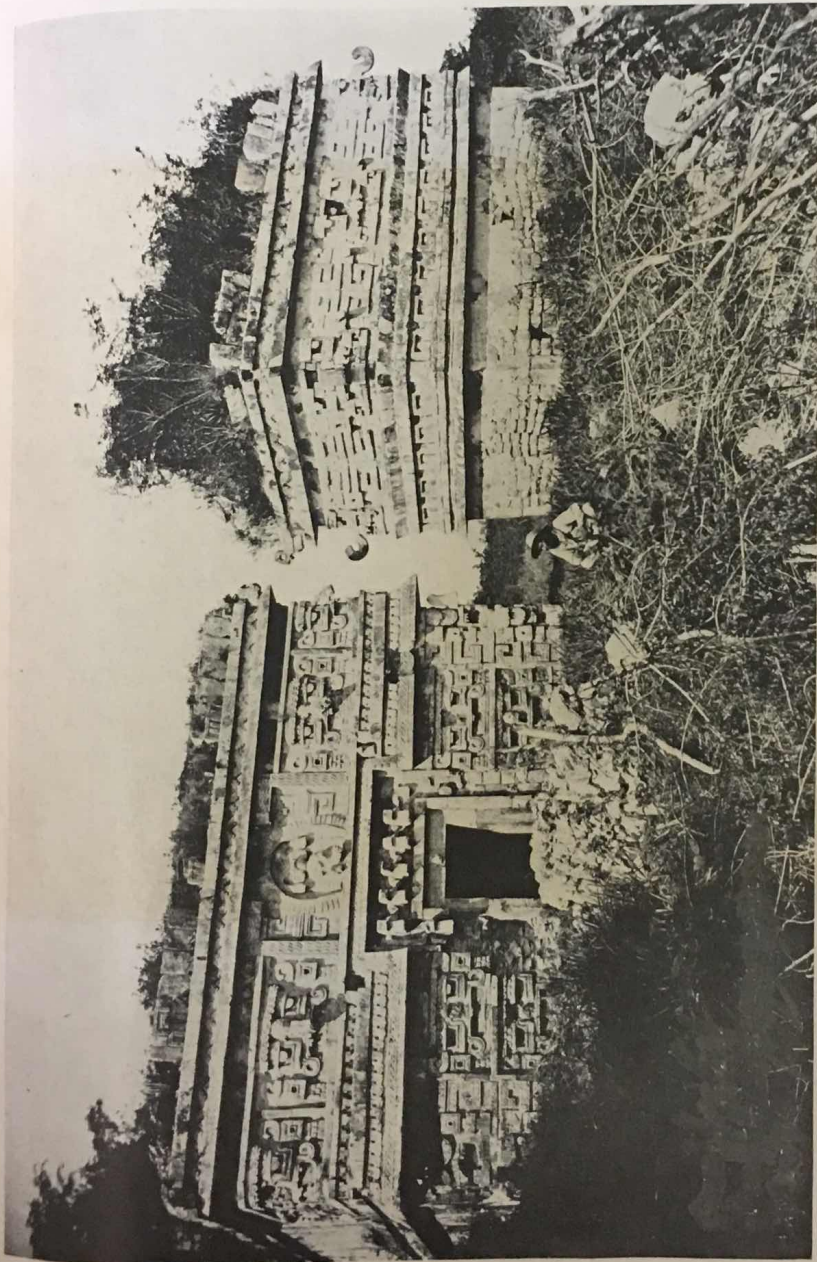
**Face of Step of Temple No. 11, Great Plaza  
(Original Sculpture now in British Museum)**

COPAN, HONDURAS

Supposed to be the Congress of Astronomers, who invented the calendar. This detail

*From Maya Architecture  
By George Oakley Totten*





Maler

Plate CVI—Atlantic Terra Cotta

### Casa De Monjas, or Nunnery

Eastern Facade of East Wing very much later than Main Structure.

The so-called Iglesia, to the Right.  
Examples of the Maya Rococo Style,

CHICHEN-ITZA

From Maya Architecture  
By George Oakley Totten

This design permits repetition, a great factor of economy in Atlantic Terra Cotta

4 PAGES







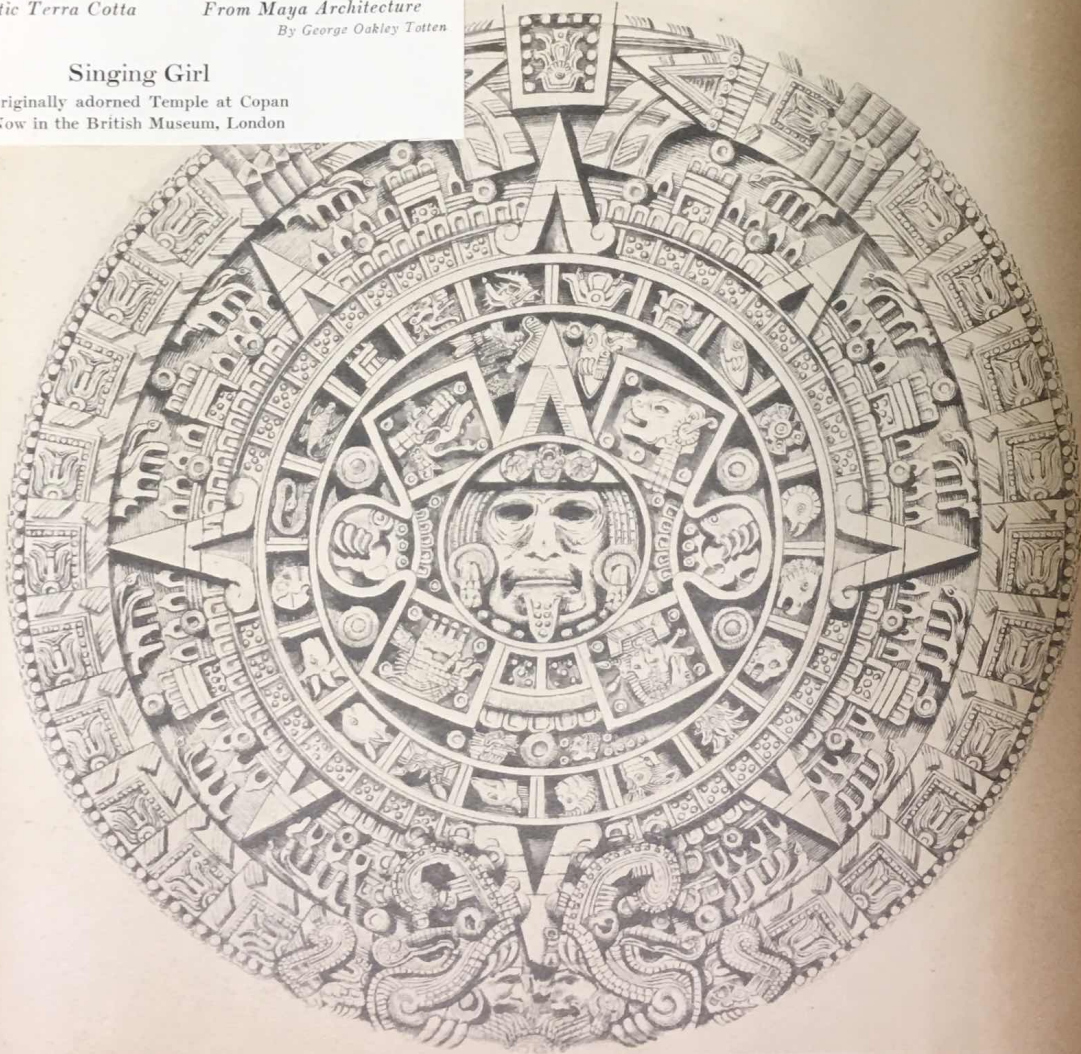
CII—Atlantic Terra Cotta

From Maya Architecture

By George Oakley Totten

### Singing Girl

Originally adorned Temple at Copan  
Now in the British Museum, London





And they learned about  
Mayas from him. Left  
to right: Russell White-  
head, Manuel, Leewitz,  
Aymar Embury II  
and Kenneth Clark

p7

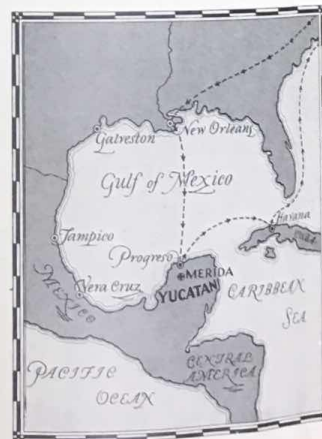
THREE  
ARCHITECTS  
JOURNEY  
TO THE

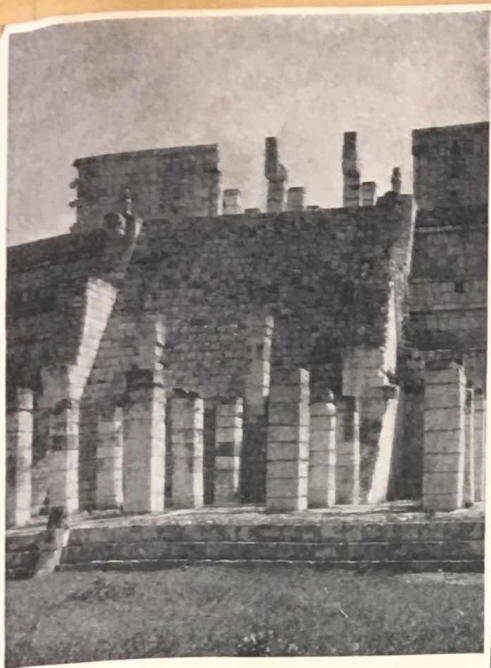
# Land of the MAYAS

and bring back the story of an  
architecture that was great when  
England was Saxon

by Kenneth Clark

*Photographs by the Author*





*Stairway, Temple of the Warriors, Chichen-Itza, a structure that affords a view of the Mayan achievement in architecture that can possibly not be found elsewhere in all of Yucatan*



*Detail of a restored temple at "old" Chichen-Itza. An excellent example of Mayan ornament*



*Serpent columns, Temple of the Warriors, Chichen-Itza*

*"After me cometh a builder, tell him I too have known."—Kipling. This gem of Mayan art stands silhouetted against the sky on a triple terraced masonry base, complete except for the roof*







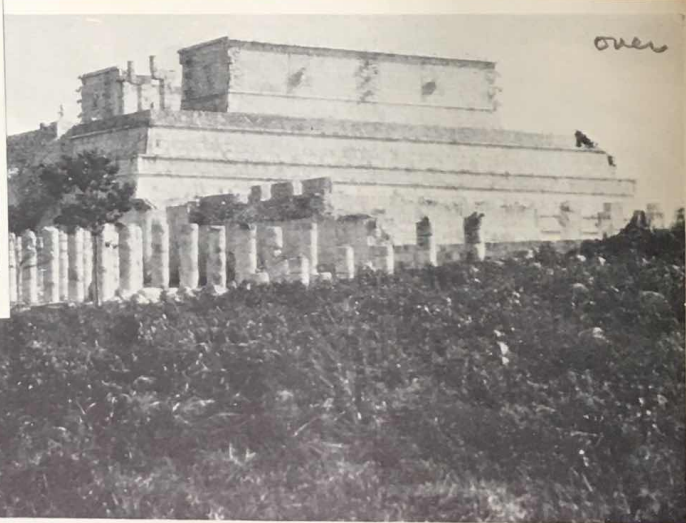
Altar and one of the "thousand columns" in the Temple of the Warriors, Chichen-Itza. Once buried deep and overgrown with brush and vegetation



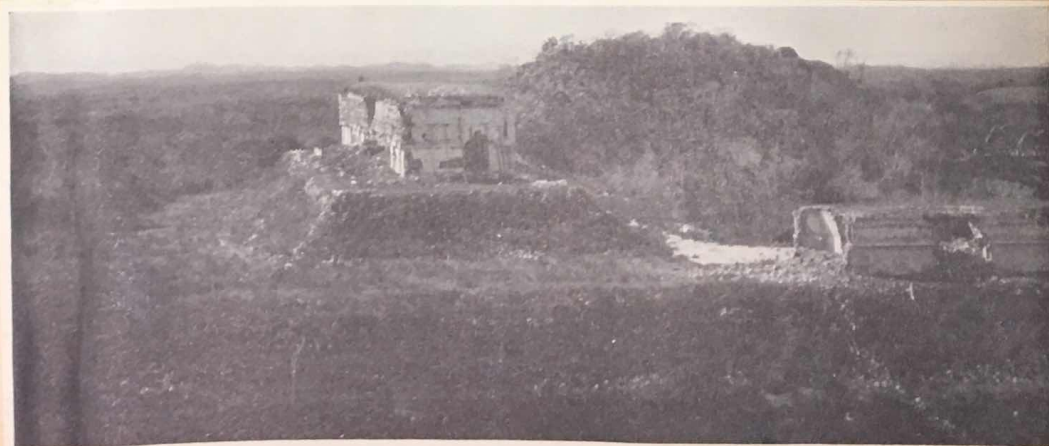
"The church," part of the Nunjas group, is impressive evidence of the labor required to execute the ornament carved in stone everywhere to be seen



House of the Serpent, Nunjas Quadrangle, Uxmal



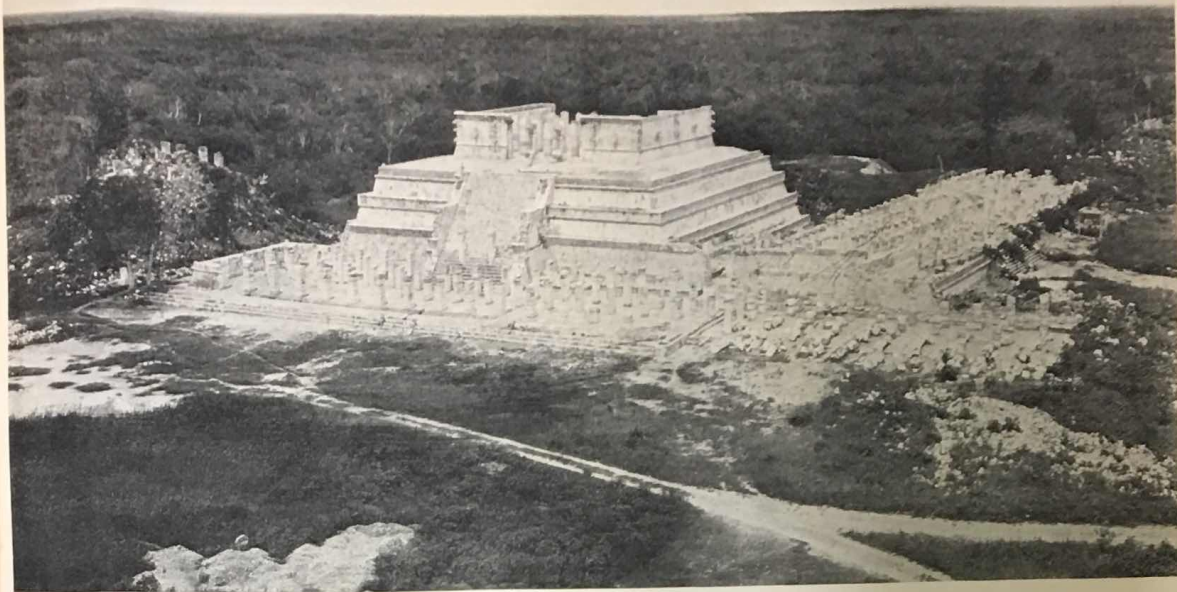
Temple of the Warriors: the architectural gem of Chichen-Itza



Palace of the Governor and House of the Turtles. Seen from the summit of the pyramid at Uxmal. The mound at the right probably hides other ruins, for almost every Mayan building excavated was once so hidden





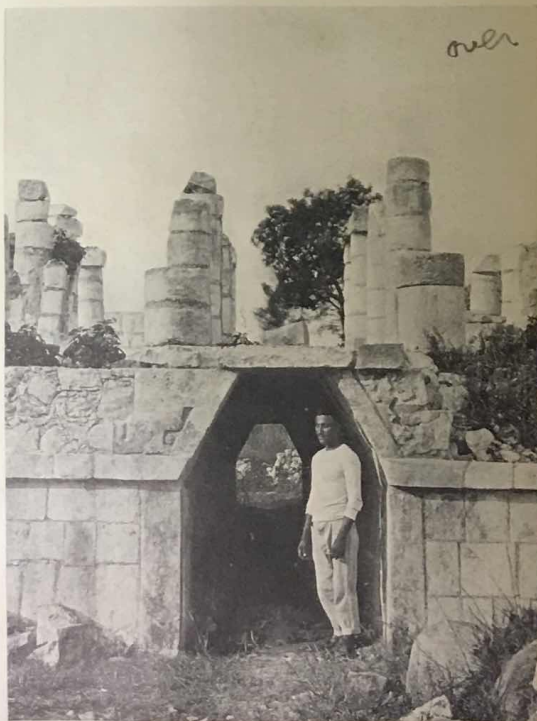


"AN UNPROMISING PILE OF STONE TRANSFORMED INTO AN IMPRESSIVE AND LASTING MONUMENT"

The Temple of the Warriors is the most imposing structure excavated at Chichen Itzá. From a state of almost hopeless ruin it has been restored in a manner worthy of its original importance (see illustrations of details, pages 118 and 126).

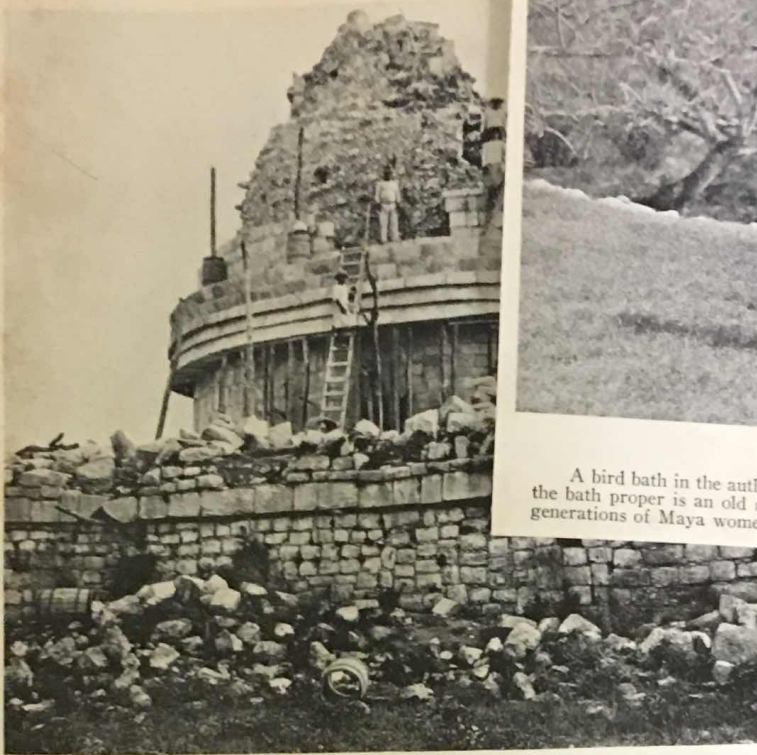


LENT BY THE PEABODY MUSEUM



THE ARCADE UNDER THE NORTH COLONNADE, AT THE GROUP OF THE THOUSAND COLUMNS, BEFORE AND AFTER EXCAVATION  
At the left the green mantle of forest has covered the ruin since Chichen Itzá was abandoned, in the middle of the 15th century. A more detailed view of the vast architectural complex of the Thousand Columns is shown on page 111.





REPAIRING THE CARACOL, OR ASTRONOMICAL OBSERVATORY, AT CHICHEN ITZÁ

In ancient times the dates of the principal astronomic phenomena in which the Maya were interested—equinoxes, solstices, phases of Venus and of the moon, and eclipses—may have been determined here. (See, also, pages 104 and 105.)



NEW USE FOR OLD STONES

A bird bath in the author's garden at Chichen Itzá. The pedestal is an Atlantean figure; the bath proper is an old *metate*, or corn grinder, deeply hollowed by the toil of long generations of Maya women (see, also, text, opposite page).



A HUMAN HEAD EMERGING FROM A SE

It has been suggested that this may have been a graphic way of visualizing the idea of the soul of the deity or mythological figure thus represented. *over*

way. Roof troubles must have been a constant source of worry to the priesthood at Chichen Itzá, since these great colonnaded halls were always threatening to cave in.

The buildings on the east, south, and west sides of the Court of the Thousand Columns, consisting of other colonnades, pyramids, and temples, yet remain to be excavated; but when this great inclosure has been completely cleared and its different architectural units repaired, it will take its place among the greatest surviving wonders of the ancient world.

#### TEMPLE OF THE WARRIORS

The most imposing structure excavated by the staff of the Carnegie Institution at Chichen Itzá is the Temple of the Warriors, standing at the northwest corner of the Group of the Thousand Columns.

This truly magnifi-



BEARING HIS BURDEN THE WAY HIS FOREFATHERS DID  
Material for repair work on the summit is going up on the top of an Indian's head just as in ancient times.





A BIRD'S-EYE VIEW OF THE NORTH COLONNADE AFTER EXCAVATION

This splendid hall is 465 feet long, including the unfinished eastern end. When it and the other units of the group have been cleared and repaired, the whole will take its place among the greatest pre-Columbian architectural wonders of the New World (see, also, text, page 120).

*over*



PITTSBURGH STEEL TO THE AID OF FALLING MAYA TEMPLES

An overhanging corner of the Temple of the Warriors was supported by a series of intermeshing steel I-beams, which later were supported from below by reinforced concrete columns (see, also, text, page 121).

est Maya city; Chichen Itzá, according to the late Maya chronicles, the so-called Books of Chilán Balam, which give synopses of the history of Yucatan, is the oldest city of the New Empire. Therefore, with excavations going on at these two sites, the Carnegie Institution has 15 centuries of ancient Maya history under study and investigation.

It is far too early to write the final

ging; of weary search through insect-ridden, fever-infested, all-but-impenetrable forest, for new cities and additional hieroglyphic inscriptions; of laborious researches of specialists in different fields of learning; of cooperative investigations of numerous scientific institutions—all lie between the present and the writing of the final chapters of Maya history. But a beginning has been made, and it is not

*over*

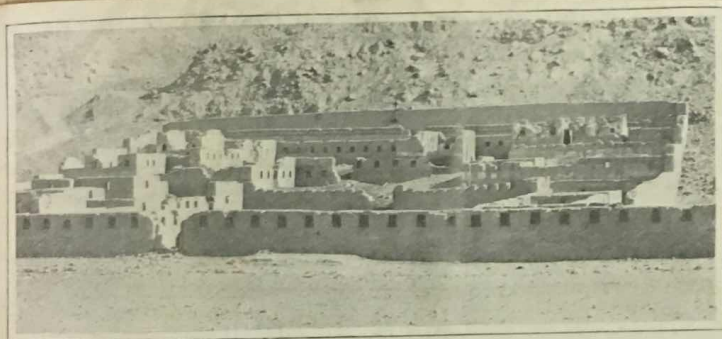






ANOTHER VIEW OF THE XOCHICALCO RUINS: CUERNAVACA, MEXICO

the neighboring hacienda houses were built of stone taken from these ruins. The carvings are of warriors, serpents, birds, animals, and plants. At the foot of the hill which these stones surmount are several caves, one known as the Grotto of the Sun.



INCA PALACE OF ADOBE IN THE VALLEY OF PISCO  
(Sixth Period)

## Ancient South-American Civilization

BY MAX UHLE

University of California

THE American continent is a young one in more than one sense; its geological age is not as great as that of the Eastern Hemisphere, and its discovery in the fifteenth century introduces it to the world's history in a comparatively recent epoch. An unsolved question, however, remains—the date of the first appearance of man and of the early dawn of civilization upon this continent. The conditions of America favored not less than those of the other continents an early development of human civilization, and as explorations are now disclosing the primitive ages of this continent, it becomes more and more apparent that the Eastern world cannot claim to be the only cradle of human culture.

The Spanish conquistadores found in the Pacific countries of

America—in Mexico, Central America, Ecuador, and Peru—flourishing civilizations. They found the people living in highly organized states, under well-ordered governments, in large, well-built cities; palaces and temples of stupendous size and splendor abounded in every direction. Arts and crafts were highly developed, commerce was

flourishing, rafts under sail navigated the seas and connected distant countries for the exchange of their goods. In Peru the llama was domesticated and served as beast of burden; well-built highroads intersected the countries, especially Peru.

The first discoverers of this surprising culture were not able to give more than detailed descriptions of what they found; the possible antiquity and previous history did not trouble them. Some of the ancient traditions



VESSEL DECORATED WITH HUMMING-BIRD  
(Earliest Period of the South)





# To Dredge Yucatan's Treasure- Filled Ancient Pool of Sacrifice.



ONE OF THE GREAT CARVED STONES AT THE DOORWAY OF THE TEMPLE OF THE TIGERS AT MYSTERIOUS CHICHEN-ITZA.

**M**R. W. D. PARMELEE, of Harvard University, has just returned to the United States after a perilous trip of exploration among some of the mysterious buried cities of Yucatan.

He was accompanied by only one white companion and six Indians, who were employed to cut away the tropical growth that covers the ancient ruins and bars the way to them.

Mr. Parmelee visited two of the greatest centres of the old Mayan civilization, which, having first fallen into the hands of the Aztecs, was swept away by the cruel and barbarous Spaniards four hundred years ago.

The objective point was Tulum, a rich centre of the old Yucatan culture. But they also made a brief exploration of the great city of Chichen-Itza, the holy city of the Mayans, where the great god Kukulkhan, the Feathered Serpent, was worshipped. In Chichen-Itza is a great pool with limestone walls and a depth of water of seventy feet. Into this pool were cast thousands of men and women, sacrificed to the Feathered Serpent.

The pool, or senote, has never been thoroughly examined, but its bottom must be scores of feet deep with bones of the sacrifices and with the treasure with which these hapless victims were loaded before being cast into the sacred lake.

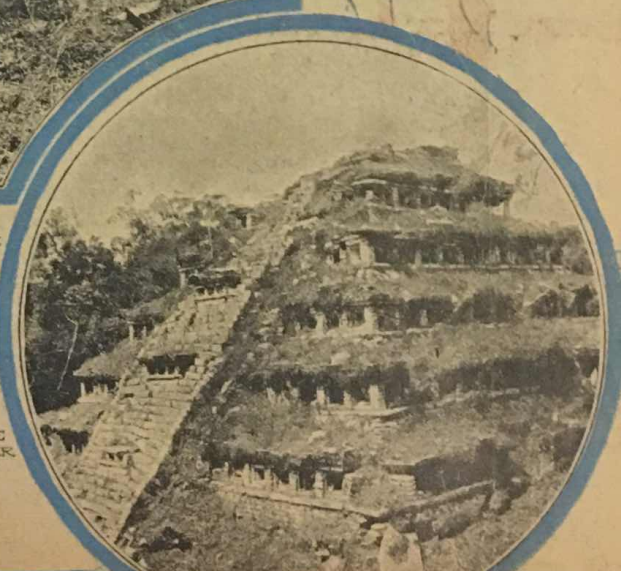
It is likely that as a result of Mr. Parmelee's investigations a modern dredge will be taken to Chichen-Itza and the ancient sacrificial lake will be pumped of its tons of treasure.

Because of danger from tribes of Indians who live in this section and who visit the most barbaric tortures upon all white men whom they catch, Mr. Parmelee and his companion suddenly cut short their visit.

Here Mr. Parmelee tells of this wonderful buried city of Chichen-Itza, its sacrifices and the treasure which the senote hides.



A COLOSSAL FIGURE SQUATTING LIKE THE SPHYRX NEAR CHICHEN-ITZA, THE WORK OF THE ANCIENT MAYANS.

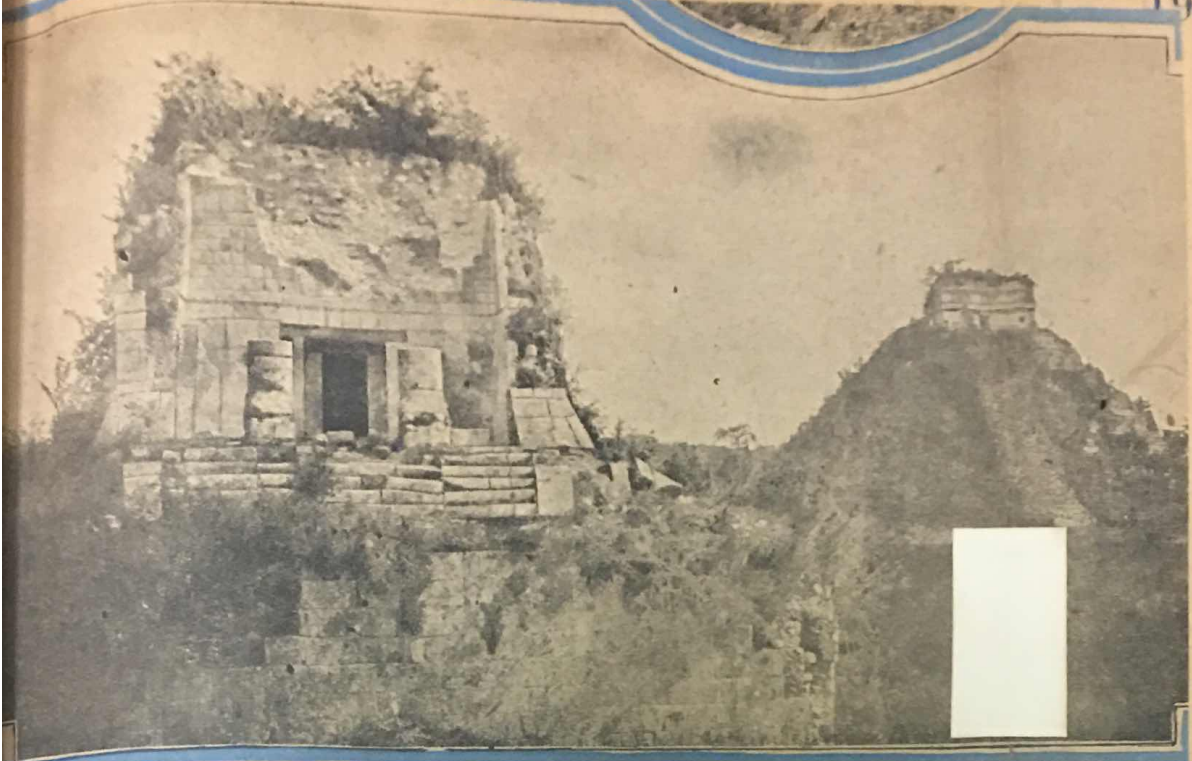


THE GREAT TEMPLE AT TLAXIN-ANOTHER BURIED CITY OF YUCATAN.





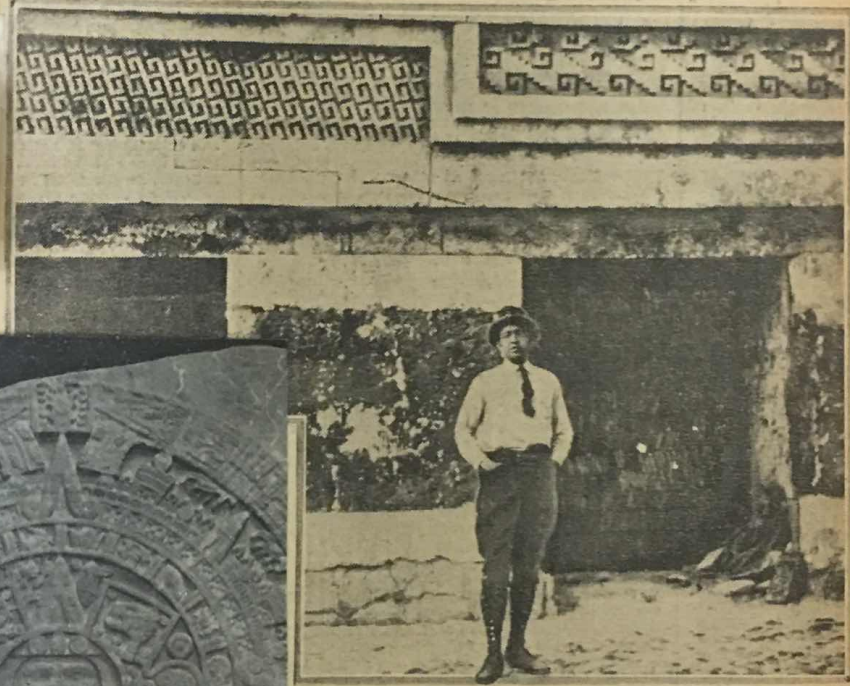




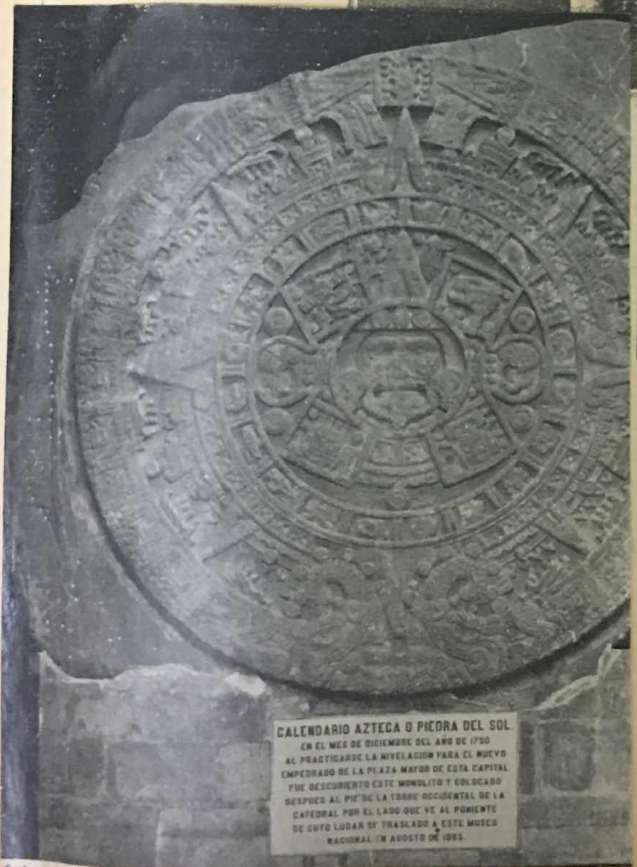
DESOLATION OF CHICHEN-ITZA. A REMARKABLE PHOTOGRAPH OF THE TEMPLE OF THE TIGERS--IN THE FOREGROUND--AND THE CASTILLO ERECTED ON AN ARTIFICIAL PYRAMID 250 FEET HIGH



SCULPTURED QUETZAL IN TEMPLE



**FINDS RICHES** — Professor Alfonso Caso, discoverer of the Mixtecan King's tomb at Monte Alban, Mexico, the richest archeological find in recent years. He is shown at the doorway of the tomb. Associated Press Photo.



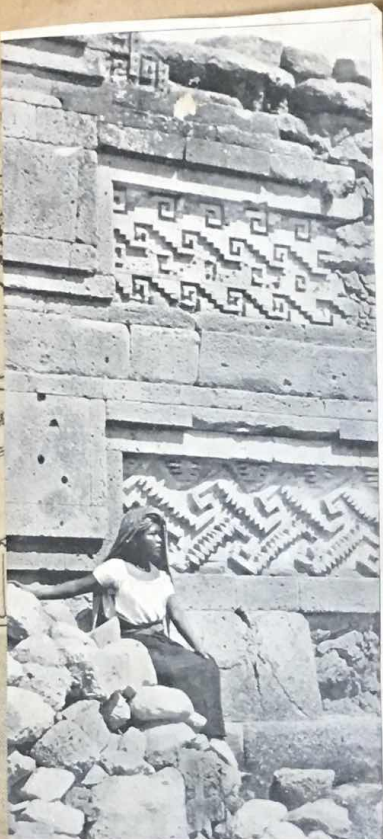
**CALENDARIO AZTECA O PIEDRA DEL SOL.**  
EN EL MES DE DICIEMBRE DEL AÑO DE 1730 AL PRACTICARSE LA INVEIGACION PARA EL NUEVO EMPEDRAO DE LA PLAZA MAYOR DE ESTA CAPITAL FUE DESCUBIERTO ESTE MONOLITO Y COLOCADO DESPUES AL PIE DE LA TORRE OCCIDENTAL DE LA CATEDRAL POR EL LADO QUE VE AL PUENTE DE CUYO LUGAR SE TRASLADO A ESTE MUSEO NACIONAL EN AGOSTO DE 1895.

Aztec Calendar Stone.





Great  
nted



BIT OF OLD MEXICO THE RUINS OF MITLA.



OVER



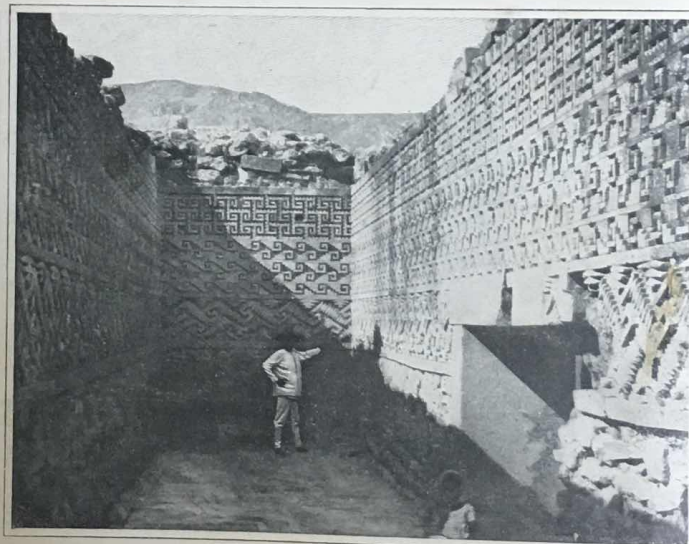
OVER

STATUES OF  
GODS  
RECOVERED  
NEAR THE  
ALTAR.





The Calendar  
Stone of the  
Aztecs Dis-  
covered in  
Mexico.  
Similar Ones  
of Solid Gold  
Were Owned  
by the Incas.



After a photograph by C. B. Waite

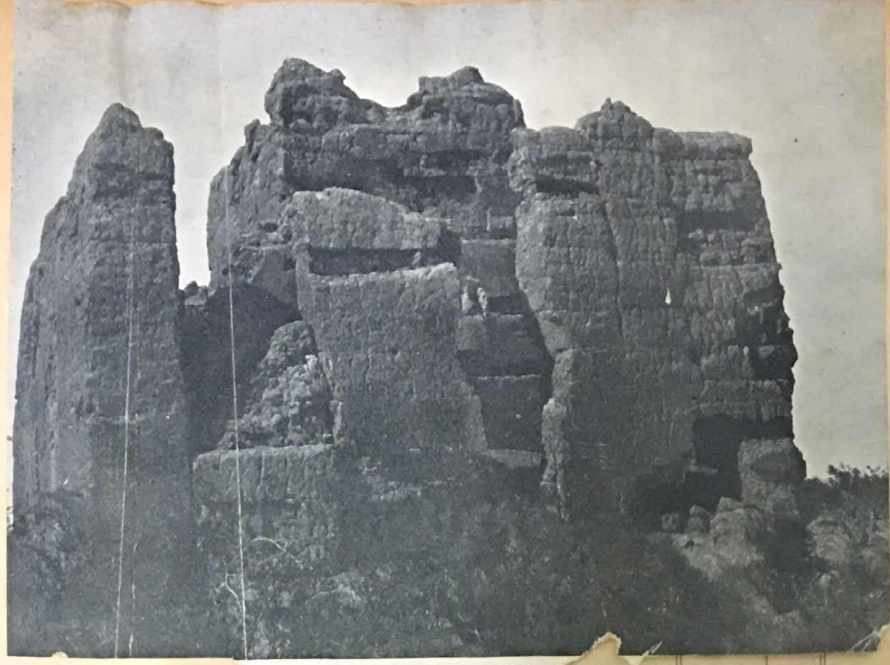
ROOM OF MOSAICS IN A TEMPLE AT MITLA, ALMOST A COUNTERPART OF BUDDHIST TEMPLES  
FOUND IN JAVA, NORTH CHINA, AND MONGOLIA

It must be acknowledged that there are many difficulties and inconsistencies in Hui Shen's account of the introduction of Buddhism into Fusang, or America. These, however, are easily accounted for when it is remembered he was a native of Cabul, speaking Chinese imperfectly, while Yu Kie, who had never travelled, must have failed to understand some of his statements. The account was written before printing was in use, and hence in the copying many errors may have crept in. Furthermore, the Chinese characters are subject to changes, in the lapse of time both in sound and meaning. Again,

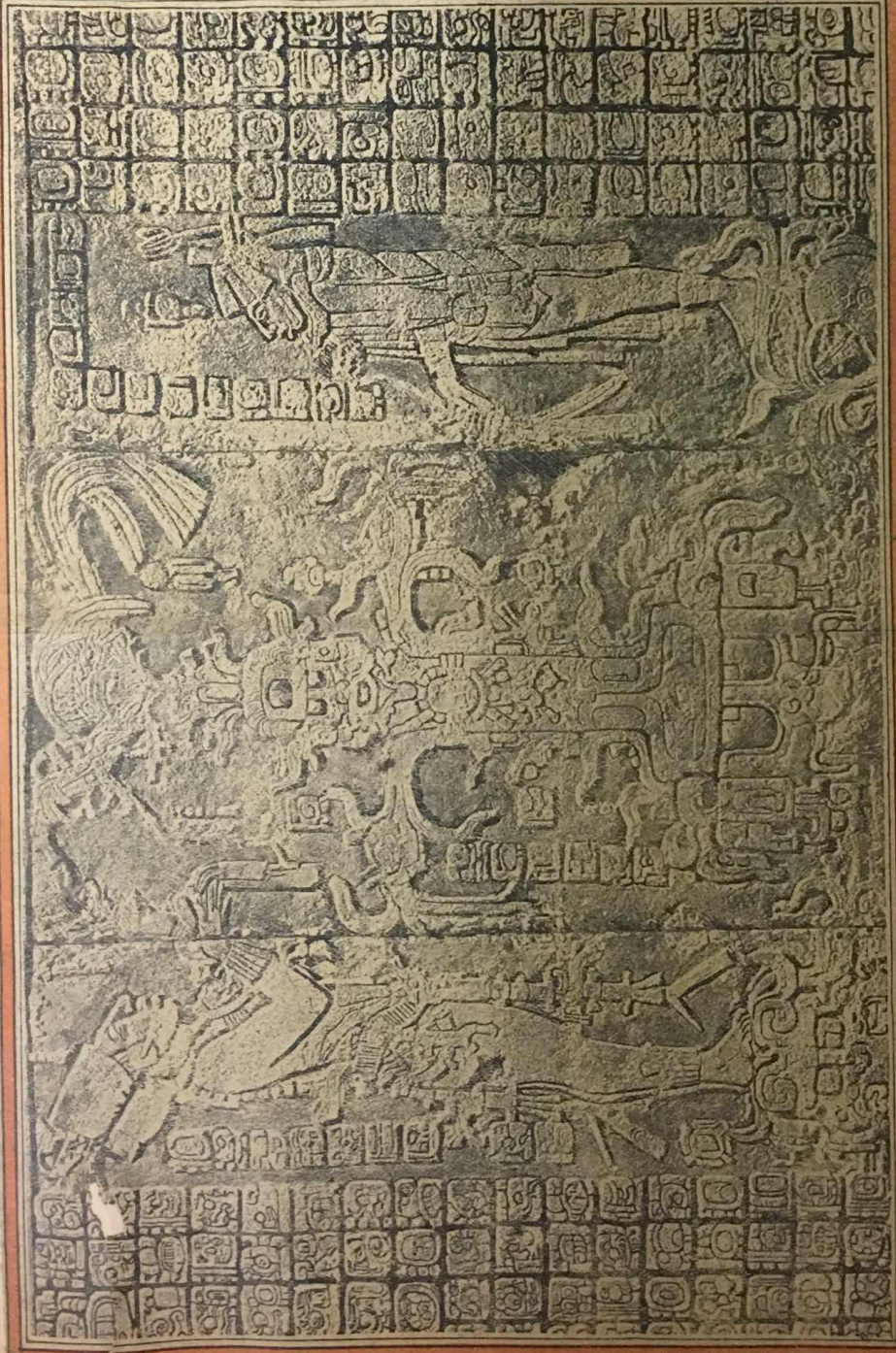
tion of Buddhism in the fifth century may have been soon swept out of existence.

Above fourteen centuries have elapsed since Hui Shen and his colleagues pressed on from one unknown land to another to spread the light which they possessed. Their faith was strong enough to enable them to brave all toils and dangers. They accomplished their task, and the success they achieved may yet prove to have been much greater than is generally supposed. At any rate they have the honor of being the pioneers; and now they are followed by the members of the Japanese Buddhist Mission who are seeking





PRE-HISTORIC RUINS OF CASA



THE TOLLATED CROSS AT PALENQUE - THE MYSTERIOUS ALTAR OF THE ANCIENT BURIED CITY





FAIENCE PANEL, "THE SUN-GOD," BY LEON V. SOLON.



KILBANE, OTS, GUATEMALA

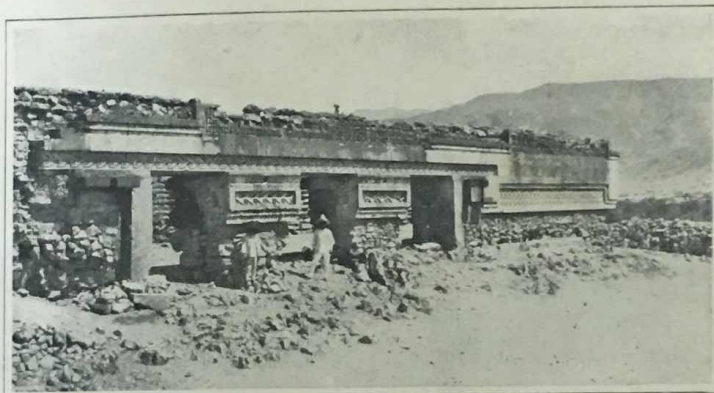


Ruins, Guirigua





*A part of the Ruins of Mitla as they appeared in January, 1907, at least Five Hundred and probably a Thousand Years after they were Built*



*After a photograph by C. B. Waite*

ENTRANCE AND FACADE, RUINS OF MITLA

## The Buddhist Discovery of America

*A THOUSAND YEARS BEFORE COLUMBUS*

BY JOHN FRYER, LL.D.,

Professor of Oriental Languages and Literature, University of California

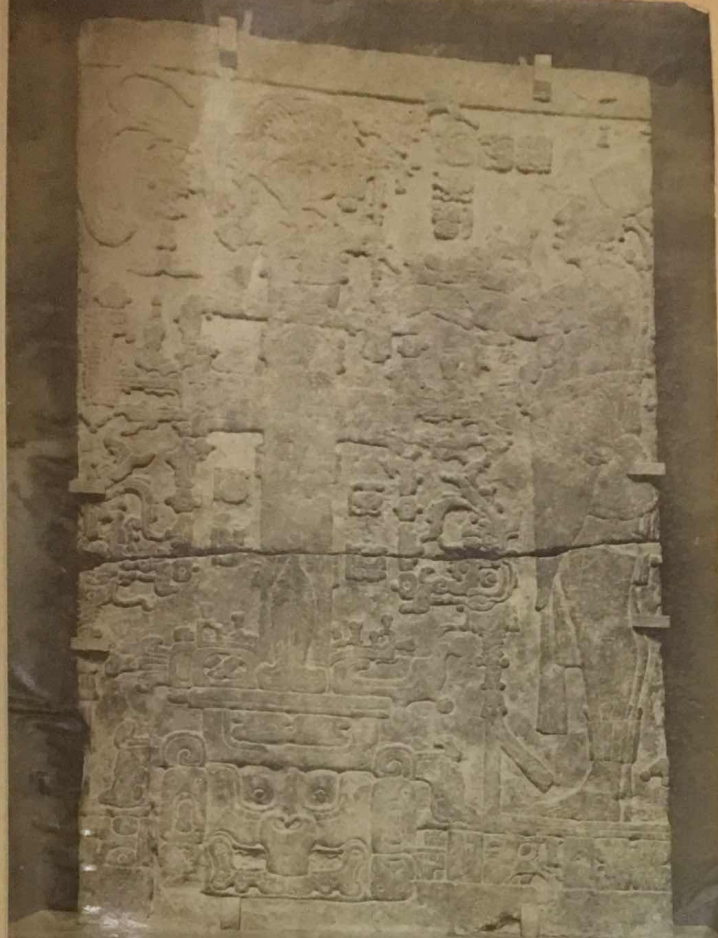
IN a comfortable building on one of the more quiet and retired streets of the city of San Francisco there have lately been established the headquarters of a Japanese Buddhist Mission to America. The object of this mission is not only to keep up the teaching and practice of Buddhism among the fast-increasing numbers of Japanese who have come to live in California, but it also embraces the more ambitious hope of spreading the knowledge of that cult among the people of America. A director and four priests, all having received a good English education in Japan, have been sent out by the wealthy members of the "Shin-shiu," or True Sect of Buddhists, and are already actively at work. About five hundred Japanese attend the regular services of this Oriental church, which are of course conducted in the Japanese language. The Young Men's Buddhist Association connected with it numbers over two hundred members.

Three branches are established at other cities of California. There is a separate service on Sundays in English, at which twenty or more Americans are generally present, of whom eleven have already been converted to Buddhism, and have openly professed that they take their refuge in Buddha, in his gospel and in his order. The church is called the Dharma-Sangha of Buddha.

There are various features connected with this mission that are of deep interest and importance. Perhaps the most extraordinary feature is its well-authenticated claim to be the successor and counterpart of an early Buddhist mission to America which existed in the fifth century, and which, like the present one, consisted of five Buddhist priests. It seems almost incredible that just at that notable period when the Dark Ages commenced in Europe, through the western influx of barbarian tribes, Buddhism, "The Light of Asia," was carried eastward across the







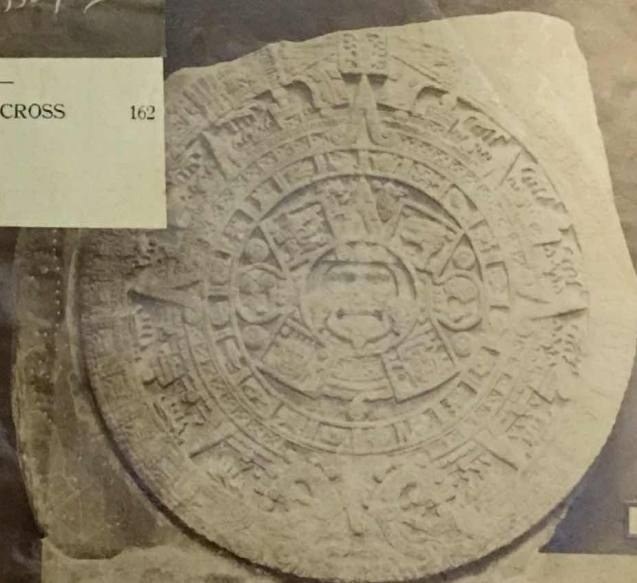
162

*A. Briquet fol.*

MEXICO, C. PELLANDINI, EDEUR, MEXICO

CRUZ DEL PALENQUE = THE PALENQUE CROSS

162



CALENDARIO AZTECA O PIEDRA DEL SOL  
 EN EL MES DE DICIEMBRE DEL AÑO DE 1500  
 SE PRACATIZABAN LA BIVELACION PARA EL MUNDO  
 EMPESANDO DE LA PLAZA MAYOR DE ESTA CAPITAL  
 EN EL DICIEMBRE EN EL MUNDO EN Y DOLICIANO  
 DESPUES AL PO DE LA URBAN DOLICIANO DE LA  
 EATONAL POR EL LARGO QUE SE AL POMEKIE  
 DE ESTA URBAN DE TRAILADO A ESTE MUNDO  
 NACIONAL EN DOLICIANO DE MUNDO

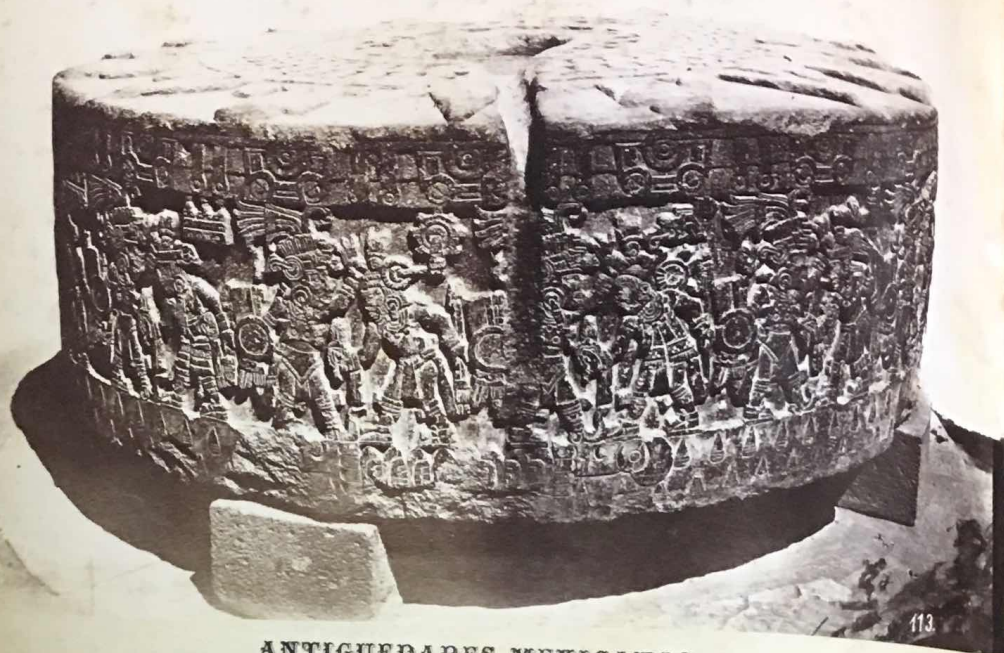
170

MEXICO, C. PELLANDINI, EDEUR, MEXICO

CALENDARIO AZTECA = CALENDER STONE

170



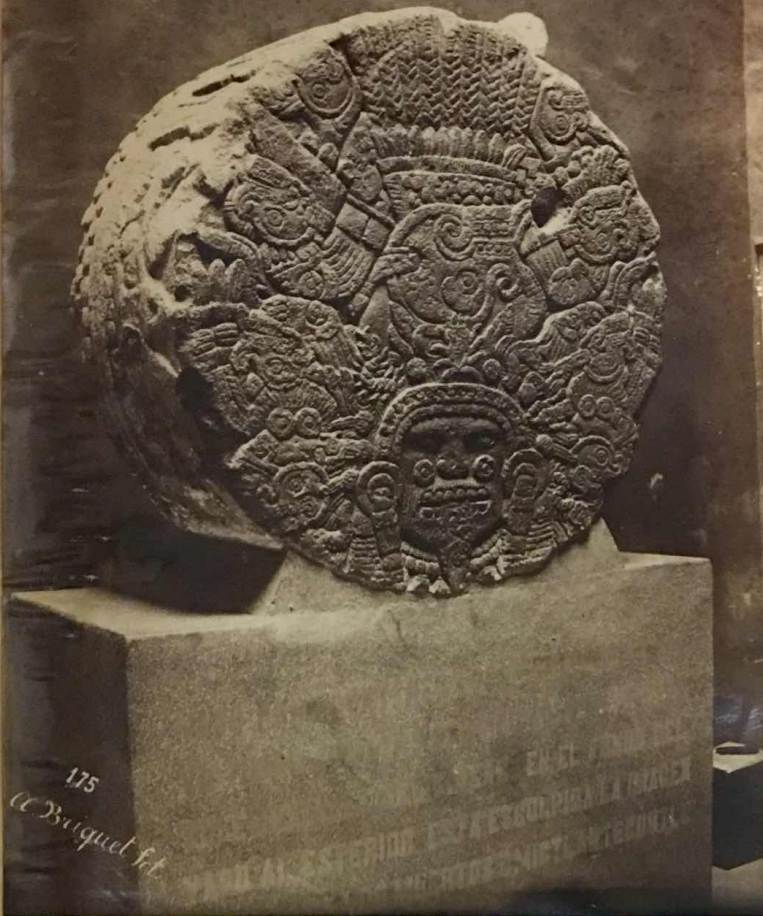


ANTIGUEDADES, MEXICANAS.

PIEDRA DE LOS GLADIADORES.  
MUSEO DE MEXICO

113

GLADIATOR STONE.  
MUSEUM OF MEXICO.



175

C. Buquel f.

**ANTIGUEDADES, MEXICANAS. 175**  
 PIEDRA PARA CONTENER LOS CORAZONES  
 DE LAS VICTIMAS DE LOS SACRIFICIOS.  
 MUSEO DE MEXICO



MEXICO, C. PELLANDINI, EDEUR, MEXICO

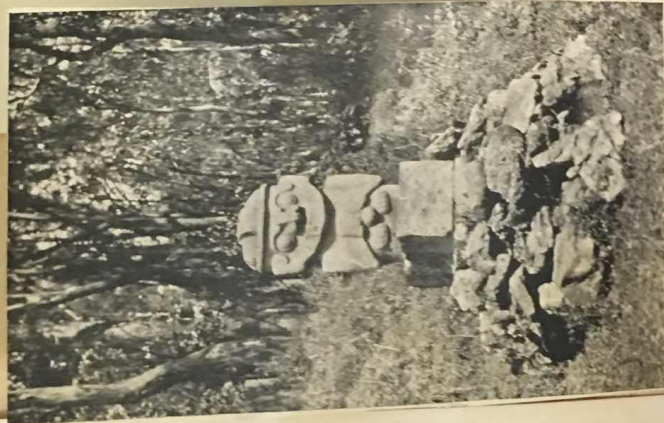




Photograph from Mrs. O. R. de Lozano  
THE TEMPLE OF QUETZALCÓATL, OR THE "FEATHERED SNAKE"



Photograph by Clifton Adams  
A DETAIL OF TOLTEC DECORATIVE SCULPTURE  
One of the great snake heads that adorn the outer surface of one of the smaller and more ancient pyramids found inside the newly excavated citadel discovered near Teotihuacán.



Photograph by Frank M. Chapman  
A PREHISTORIC STONE IMAGE FROM SAN AGUSTÍN, IN THE PARK OF BIGOTÁ  
San Agustín, at the head of the Magdalena Valley, was the site of a culture, neither Inca nor Chibchan, about 1000 years before the Incas. Figures of this kind have been found in numbers there. Two of them were transplanted to Bigotá under the direction of the author.



Photograph by L. H. MacGowan  
ONE OF THE TEMPLE STAIRS AT TEOTIHUACÁN  
The pyramids at this ancient Toltec city, which is within an hour's ride by rail from Mexico City, were built of adobe bricks, faced with stone and cement, and apparently were enlarged from time to time. On the top of each there was probably an altar dedicated to its particular god.

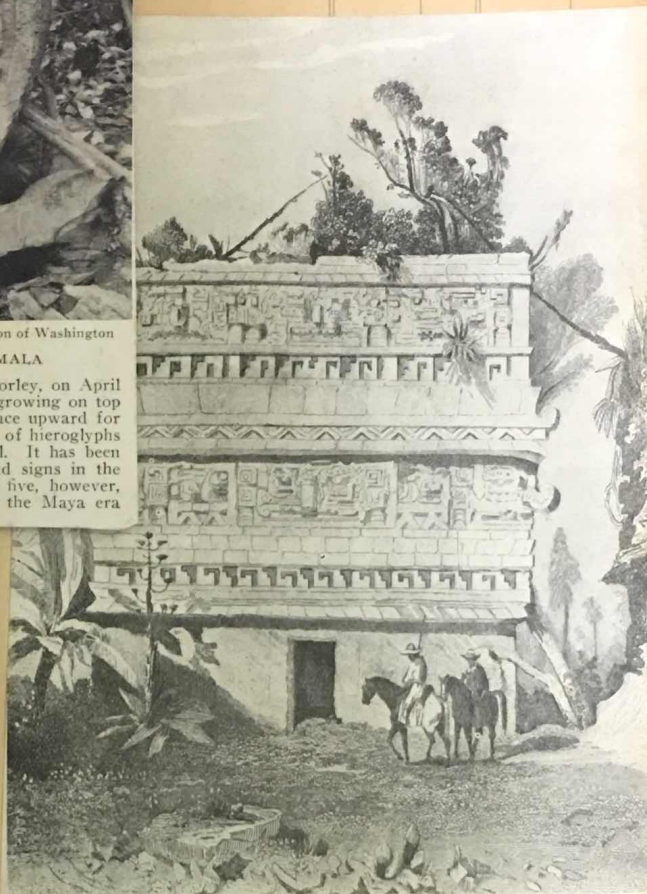




Courtesy of The Carnegie Institution of Washington

THE ALTAR OF STELA 2, AT THE RUINS OF IXLU, PETEN, GUATEMALA

This beautiful example of Maya stone-carving, when first seen by Dr. Morley, on April 2, 1921, was tightly clasped in the roots of a large breadnut tree which was growing on top of it. When this tree was felled the next day and the altar beneath turned face upward for the first time in more than a thousand years, it was found to have six columns of hieroglyphs sculptured on its top in an almost perfect state of preservation, or 32 in all. It has been possible to decipher only the first five of these, namely, the first and second signs in the first column and the first, second, and third in the second column. These five, however, record the date of this altar as having been 10.2.10.0.0 2 Ahau 13 Chen of the Maya era 620 A. D.).



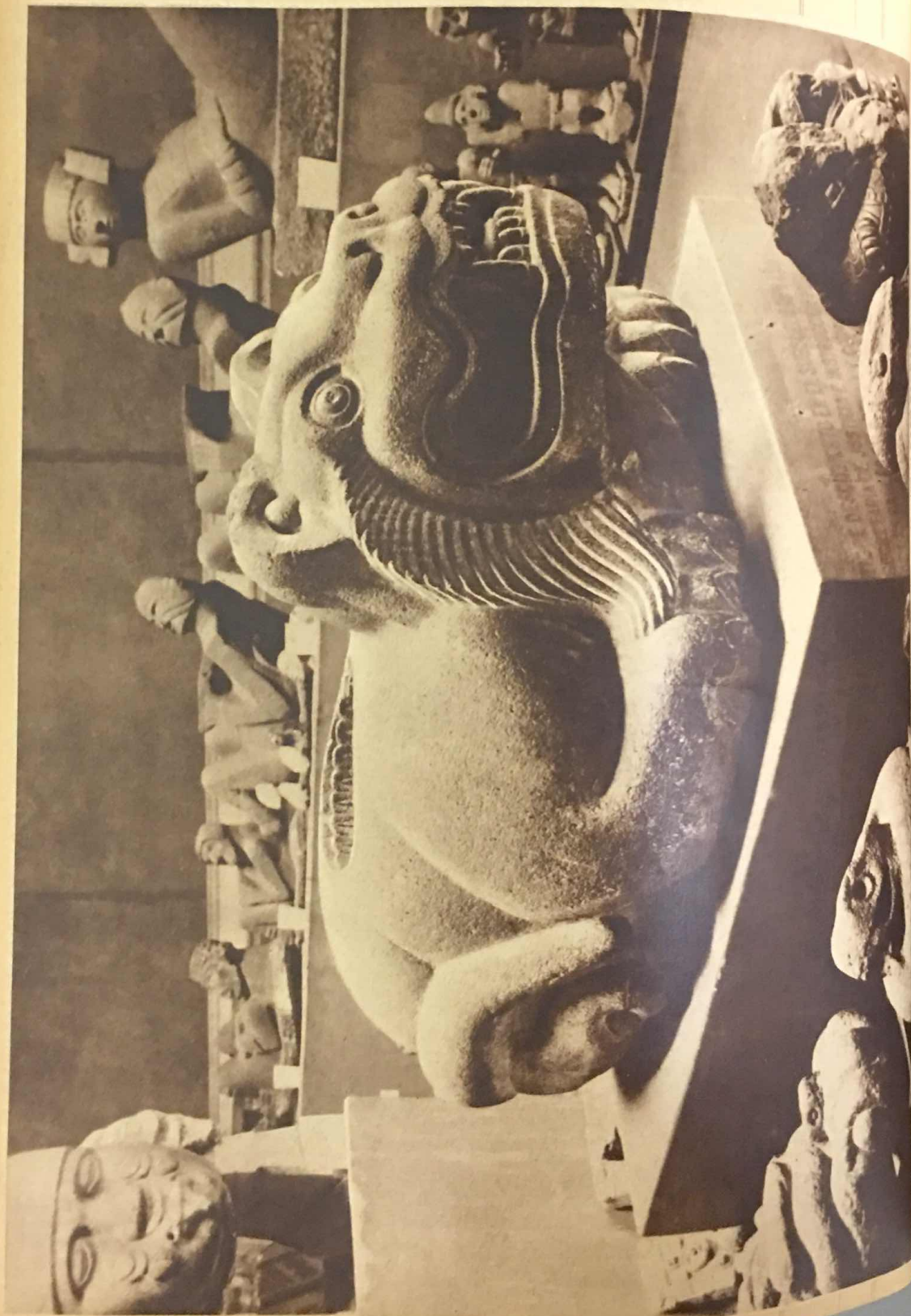
BASKETRY AND BEAD-WORK EXPRESSED IN STONE—THE "EGLESIA," CHICHEN-ITZA, YUCATAN.

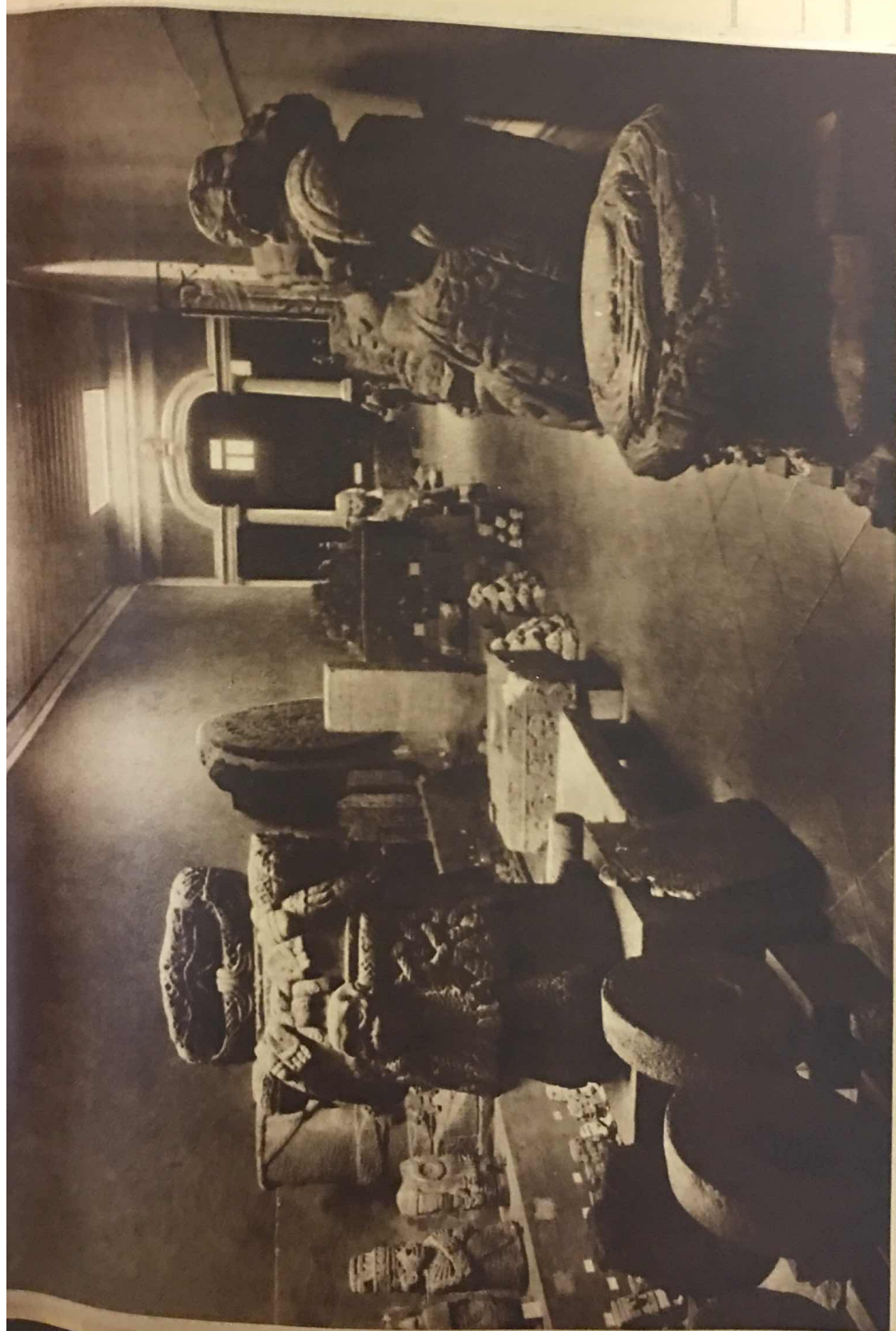


A SECTION OF THE WALLS OF THE RUINS OF XOCHICALCO, MEXICO

"The stones of the crown and surface are laid upon each other without cement and kept in place by their weight alone; and as the sculpture of a figure is seen to run over several of them, there can be no doubt that the work was cut after the pyramid was erected. Stones 7 feet in length by nearly 3 feet in breadth are seen here, and all the great blocks of porphyry which compose the building were brought from a distance and borne up a hill 300 feet high. The superstitious Indians believe that the subterranean rooms of these ruins are inhabited by the ghosts of their ancestors and they resist any attempt to explore them."







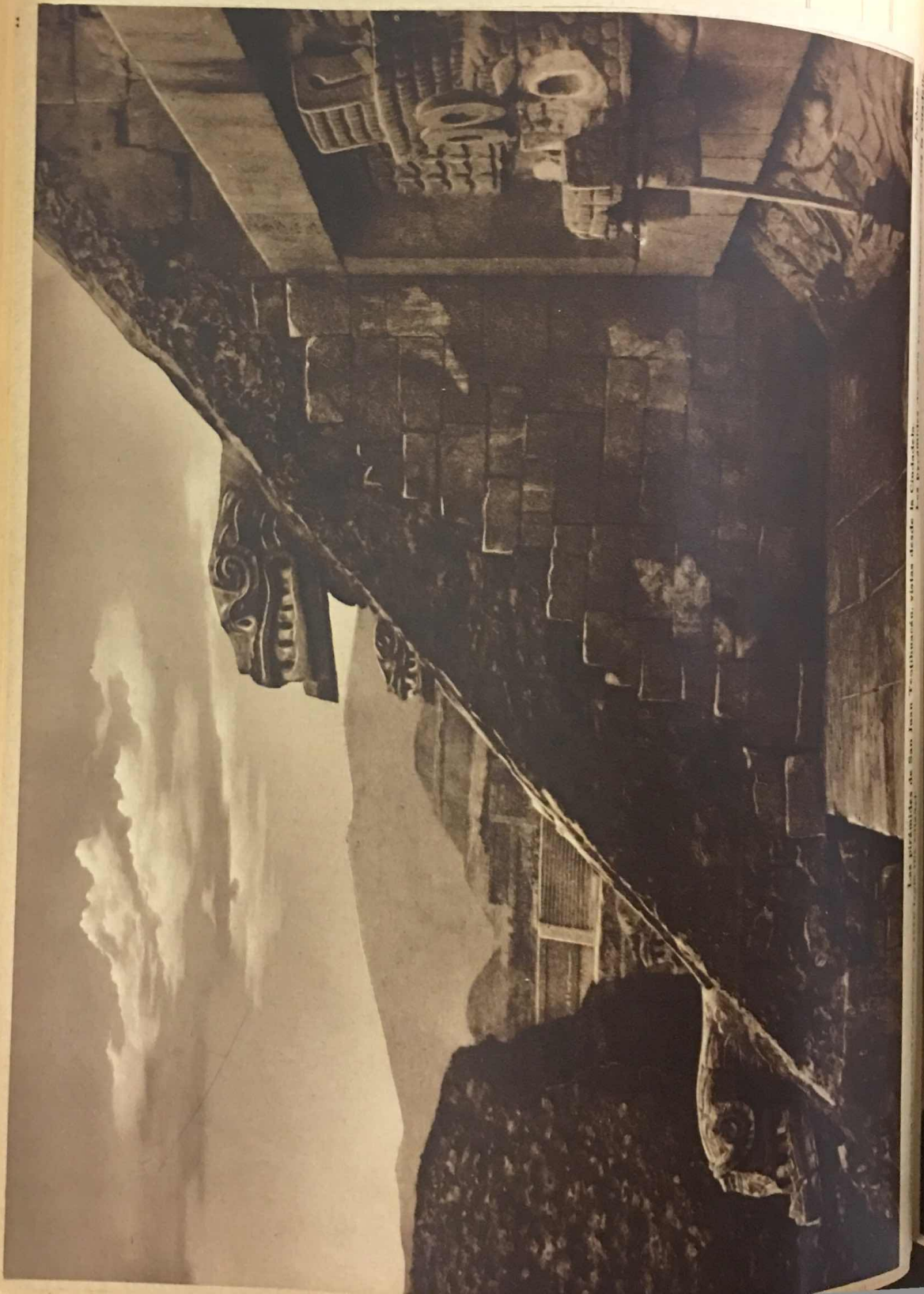
Uno de los grandes salones de arqueología en el Museo Nacional de México.

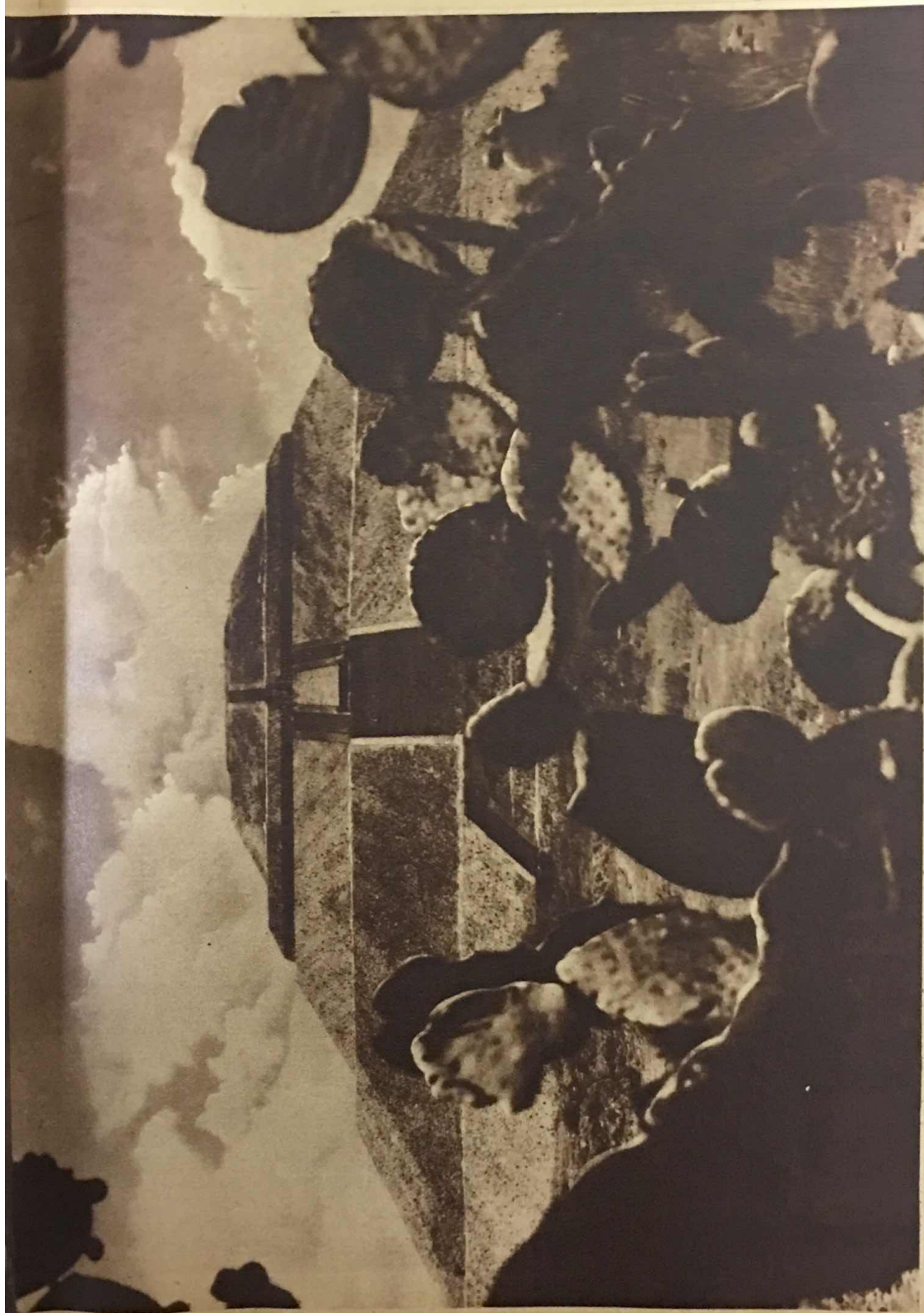
A gallery of the National Museum, Mexico City, where rare and valuable archaeological jewels are exhibited.

Un des plus grands salons du Musée Nationale de Mexico ou sont exhibées beaucoup de richesses archéologiques.

Fot. Ouse.







La majestuosa y milenaria pirámide EL SOL, en San Juan Teotihuacán. *Foto. Foto. Service, S. A.*  
The ancient and majestic pyramid named EL SOL, at San Juan Teotihuacán. *La Magestueuse et millenair pyramide EL SOL a San Juan Teotihuacan.*





El Templo de Quetzalcoatl, demostrando la magnificencia de sus labrados.





*For La Recluse.*

Détails de los soberbios labrados del Templo de Quetzalcoatl. Ruinas de San Juan Teotihuacán.

Détails des superbes sculptures du Temple de Quetzalcoatl.  
Ruines de San Juan Teotihuacan.

Details of the Superb Carvings of the Temple of Quetzalcoatl.  
(Ruins of San Juan Teotihuacan)





Temple of the Serpents, Chichen Itza, Yucatan, Mexico. The serpent head sculpture is a masterpiece of Mayan art. The temple is one of the best-preserved of the ancient ruins of the Yucatan Peninsula.





Frente principal del "Castillo". Ruinas de Chichén-Itzá, Yucatán.

Principal facade of "The Castle". (Ruins of Chichen-Itza, Yucatan.)

Front principal du Chateau. Ruines de Chichen-Itza, Yucatan.





Alzamiento en el patio del Templo de los Dioses. Estación de Chichén Itzá, Yucatán.  
 Los dioses de la corte del Templo de los Dioses. Estación de Chichén Itzá, Yucatán.





Fachada exterior, lado norte del Templo de las Monjas. Ruinas de Chichén-Itzá, Yucatán.

North facade of the Temple of the Monks. (Ruins of Chichén-Itzá, Yucatán.) Facade extérieure, côté nord du Temple des Religieuses. Ruines de Chichén-Itzá.





Detalle de la fachada del Templo de San Marcos. Sistema de Chichén Itzá. Yucatán. Estado de Yucatán. México. (Fotografía de la colección de la Biblioteca Nacional de México)



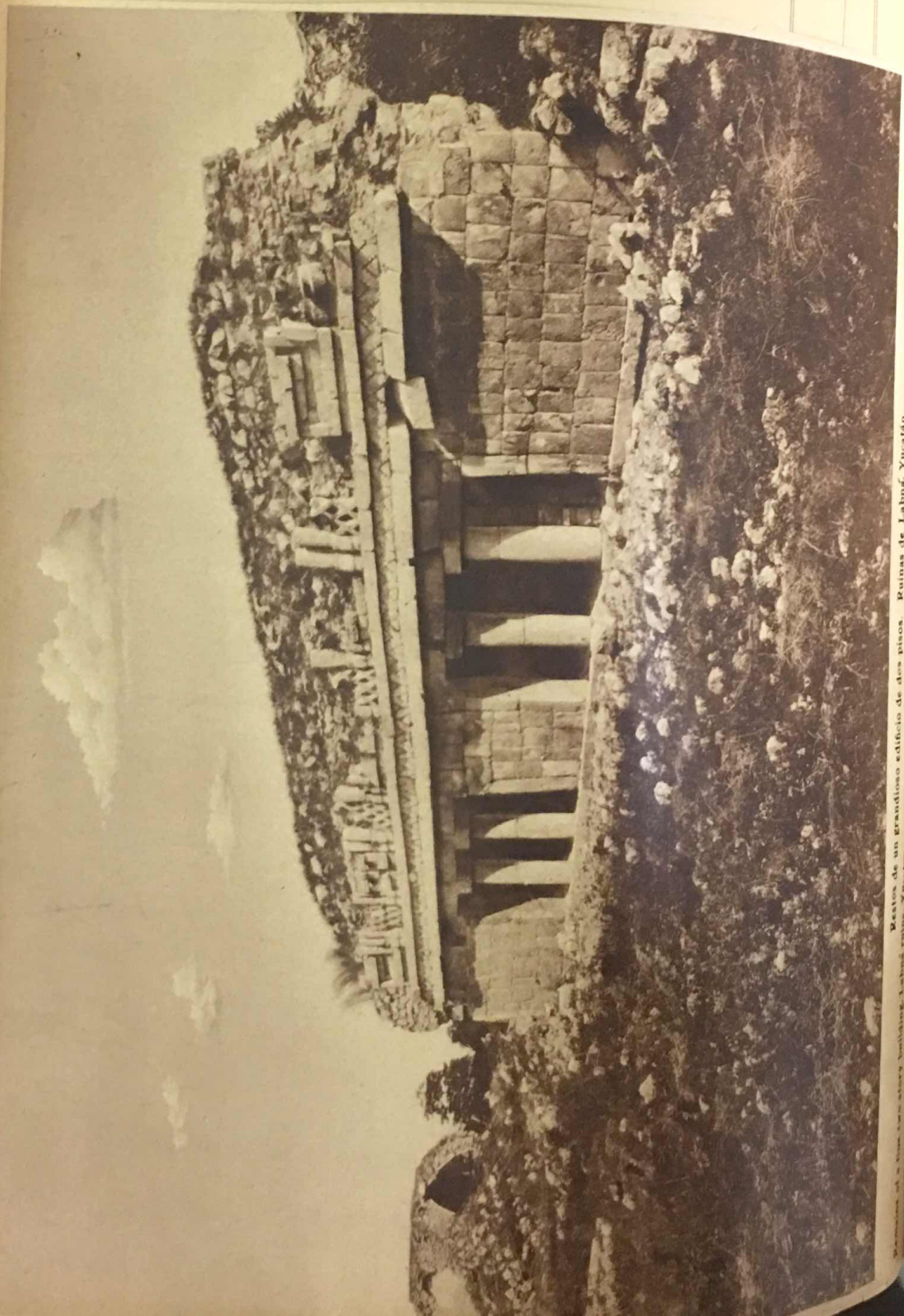


Arco monumental de las ruinas de Labna, en Yucatán.

monumental arch of the Labna ruins in Yucatan.

Arc monumental des ruines de Labna-Yucatan





Restos de un grandioso edificio de dos pisos. Ruinas de Labná, Yucatán.  
 Remains of a grandiose building of two floors. Ruins of Labná, Yucatán.







Portada del Palacio del Gobernador. Ruinas de Chichén-Itzá, Yucatán.  
 View of the exterior carvings, the Governor's Palace. (Ruins of Chichen-Itza, Yucatan).  
 Portail du Palais du Gouverneur. Ruines de Chichen-Itza, Yucatan.



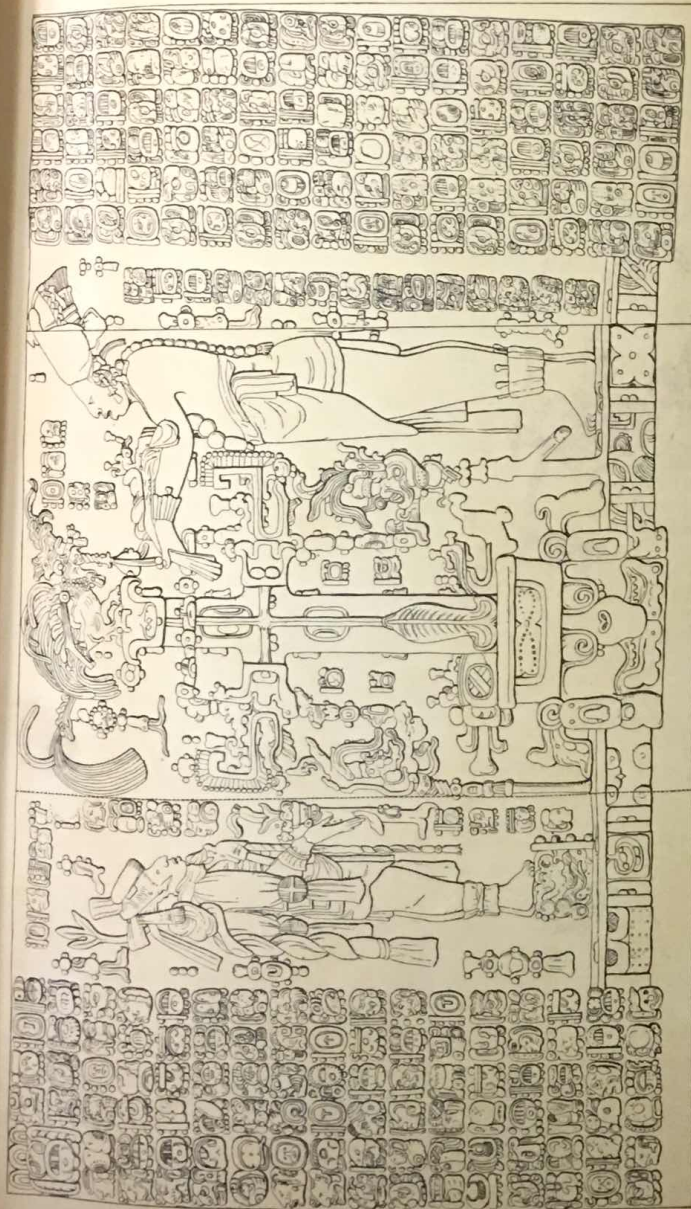


Mestiza yucateca en una esquina del "Templo de las Monjas". Ruinas de Chichén-Itzá, Yucatán.

A young woman of Yucatan, posing in front of the Templo de las Monjas (Temple of the Nuns). (Ruins of Chichen-Itza, Yucatan). | Metisse de Yucatan dans un coin du Temple des Religieuses (Templo de las Monjas). Ruines de Chichen-Itzá.







THE TABLET FROM THE TEMPLE OF THE CROSS AT PALENQUE, MEXICO

This magnificent specimen of ancient Maya art is engraved upon three slabs of cream-colored limestone, which originally rested against the back wall of the sanctuary in the Temple of the Cross at Palenque, Chiapas, Mexico. In 1840 the American diplomat and traveler, John Lloyd Stephens, had the left-hand panel removed to the United States, where for more than half a century it remained in the Smithsonian Institution. Many years later the right-hand panel was removed to the National Museum in Mexico City, and still later the central panel, upon which the representation of a cross flanked by two officiating priests is carved, was also taken to the same place.

After the visit of former Secretary of State Root to Mexico, the panel in the Smithsonian Institution was returned to the Government of Mexico, a graceful act of international courtesy; so that now, after the lapse of nearly three-quarters of a century, the three panels of this beautiful aboriginal sculpture are again reunited in the National Museum in Mexico City.

AZTEC WRITING - MANUSCRIPTS

HIEROGLYPHIC HISTORY

CONT. ON P. 53

AZTEC NUMERIC SYSTEM (OVER)





## THE FOREMOST ACHIEVEMENT OF ANCIENT AMERICA

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positions from bottom to top in a column. Just as in our decimal system positions increase by a ratio of 10 on left or right of the decimal point, units, tens, hundreds, thousands, so the Maya positions increased by ratio of 20 from bottom to top in a column, in all places except the third, which, instead of being 400, i.e.,  $1 \times 20^2$ , was 360, i.e.,  $1 \times 20 \times 18$ . This single break in an otherwise perfect vigesimal system of numeration was doubtless due to the desire to bring its third term as near to the length of the solar year as possible, 360 being much nearer to  $365\frac{1}{4}$  than 400. Examples of higher numbers are given on page 126.

## LITTLE OR NO HISTORICAL MATTER IN MAYA WRITINGS

It was stated that in so far as they have been deciphered, and it is now possible to read nearly one-half of the Maya hieroglyphs, the Maya inscriptions have been found to deal exclusively with the counting of time in one way or another. No grandiloquent record of earthly glory these. No bombastic chronicles of military pomp and pageantry, like most of the Assyrian, Babylonian, and Egyptian inscriptions. On the contrary, the Maya priests would seem to have been concerned with more substantial matters, such as the observation and record of astronomical phenomena. Of first importance to them would appear to have been the dates of the many monuments they erected.

These dates are usually recorded at the beginnings of the inscriptions, and are frequently of such accuracy as to fix their positions within a period of some 370,000 years, surely not an inconsiderable achievement for any time-count, even one of modern origin.

## THE MAYA ERECTED THEIR MONUMENTS AT INTERVALS OF EVERY 1,800 DAYS

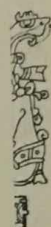
The Maya monuments, it has been ascertained from their dates, were erected at intervals of every 1,800 days—nearly five years. This custom seems to have been so general that on several occasions, when monuments commemorating specific 5-year periods at certain cities were missing, it has been

	= 0		
	= 1		
UNKNOWN	= 2		
	= 3		= 3+10=13
	= 4		= 4+10=14
	= 5		= 5+10=15
	= 6		= 6+10=16
	= 7		= 7+10=17
	= 8		= 8+10=18
	= 9		= 9+10=19
	= 10		
UNKNOWN	= 11		
	= 12		
	= 13		

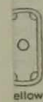
## THE MAYA "ARABIC NUMERALS"

In the Maya head numerals there are 14 different types of human heads, representing the numbers from 0 to 13, inclusive, although the numbers for two of these numbers, 2 and 11, have not yet been deciphered. The numerals from 13 to 19, inclusive, were formed by adding the essential characteristic of the head for 10—i.e., the fleshless lower jaw—to the heads for 3 to 9, inclusive. Thus, for example, adding the fleshless lower jaw of the head for 10 to the head for 6, characterized by the "crossed bands" in the eye, gives the head for 16, viz.,  $10 + 6 = 16$ .

127



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## CALENDAR - HIEROGLYPHICS - NUMERALS

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CONTINUED FROM PAGE 51



















THE WONDERFUL DIARITE VASE OF THE CRESTED WOOD-DUCK

## The Treasures of Prehistoric Moundville

BY H. NEWELL WARDLE

The Academy of Natural Sciences of Philadelphia

THE great circle of mounds on the Black Warrior River, some fifteen miles, by the crow's aerial trail, below Tuscaloosa, Alabama, must have impressed the first settlers in its vicinage with a due sense of its hoary antiquity, since they called it Carthage. All the way down to its junction with the Tombigbee, the Black Warrior wriggles—to say winds would do scant justice to its serpentine sinuosity—through corn and cotton land, past other mounds and groups of artificial eminences, but such localities are dignified by names no more reminiscent of the past than Gray's Landing and Jones' Ferry. Carthage as an appellation was too suggestive of broken columns, crumbling inscriptions,

and Punie coins to sit well upon an ancient American city of the copper age; hence the present town to which the prehistoric gives a name is now known as Moundville.

The pre-Columbian mound settlement stood upon a broad plain, elevated above the reach of the Black Warrior's most towering vernal onslaught. Three deep gullies have worked their way back from the high river-bluff on the north, and now thrust themselves between some of the principal eminences; but the rains which caused these washouts were more recent than any prayed for by priest and people of this prehistoric culture centre. Of the score of mounds in the group, the smaller are so placed as to

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### *Primitive Art from Benin*

#### PRIMITIVE ART FROM BENIN. BY H. LING ROTH.

AMONG the large variety of curious objects discovered in Benin not the least curious are the carved tusks which were found supported on equally curious cast iron and brass human heads on the altars of the city. These tusks were, in fact, found by the members of the Punitive Expedition in the same position as seen by the Dutch traveller Nyendaël, who recorded his visit some two hundred years ago. After a contemptuous reference to a carved pillar in the king's house, he proceeds: "Behind a white carpet we are also shown eleven men's heads cast in

copper, by equally as good an artist as the former carver, and upon each of these is an elephant's tooth, these being the king's gods"; and later on he refers to "seven white scowered elephants' teeth on pedestals of ivory, which is the manner that almost all the king's gods are placed within the house." Most of the tusks found *in situ* were covered with a thick coating of congealed human and animal blood; other tusks were found buried, some of them in a very perished condition.\* The tusks vary in length up to 6 metres and over, and are in themselves magnificent specimens of ivory, speaking eloquently of the pacific life elephants must have led in former times to have enabled them to live long enough to produce such splendid

tusks. The ornamentation to which the large tusks have been subjected, while preserving their form, is of two grades: the one severely plain and the other extremely decorative in its effect. The former consists of a series of three to five incised bands of plait pattern, a design very common in West Africa, placed at intervals (Fig. 29), the bands diminishing in width as they approach the tip of the tusk. The embellishment is consequently plain but elegant, and does not call for further remark. The other grade (Fig. 28) consists in

\* "At the end of each compound stands an altar decorated with large bronzes and enormous carved ivory tusks, the whole being smeared and crusted over with human blood; these altars (seventeen in number), I afterwards learnt from the chiefs who submitted to the Government, were the shrines of the defunct kings of Benin. The antiquity of each could be easily traced by the appearance and condition of the carved ivories which decorated them." (Dr. Allman, the *Lancet*, July 2, 1897, p. 44). If only six tusks were added in 200 years, the length of a king's reign must have reached the good average of thirty-three years!



STAIRCASE AT GROVE HILL COTTAGE, HARROW  
(See "An Architect's Home")

ARNOLD MITCHELL, ARCHITECT











### Tobacco Pipes

#### PRIMITIVE ART AS EXEMPLIFIED IN TOBACCO PIPES. BY RICHARD QUICK.

ARTISTIC pipes, used either for smoking tobacco, hemp, or coltsfoot, are found in all countries.



FIG. 1.—MOUND PIPES  
(In the Blackmore Museum)

OHIO

temporary with the long passed away animals which they frequently depicted. The designs of the pipes, though sometimes very simple in form, often represent the heads of animals, such as the raccoon, bear, wolf, beaver, etc. Fig. 1 shows a few in the Blackmore Museum. In each specimen it will be noticed that the object faces the mouthpiece, or drilled end. It may be safely assumed that the North American Indian inherited the practice of smoking through generations of ancestors from prehistoric man. The North American Indians smoke the calumet, or "pipe of peace," as a token of amity, and the tomahawk, or "pipe of war," as a symbol of the fight. In the British Museum there are a number of specimens of the calumet. The bowls of some of the specimens are made of catlinite (a red stone), called so after the great explorer Catlin, who first traced it to its bed. The stem is of wood, either plain or carved spiral. The tomahawk pipe was originally made of blackstone and metal. In Fig. 2 will be seen some pipes from the British Museum, the bowls of which were made in this country, and used as barter with the Indians; they were much sought after and prized by them. The Indians often engraved the blades of the tomahawk pipes, or decorated the stem with eagles' feathers, etc.

The one in the illustration, so ornamented,

In the present article I wish rather to bring before the reader those pipes made by more or less savage or uncivilised people in different parts of the world. As America is the home of the tobacco-pipe, I will commence with that country. In the Blackmore Museum at Salisbury there are, taken from the Ohio mounds, some interesting stone pipes which were found lying side by side with stone implements.

The immense antiquity of these is self-proven, since they have been executed by men of the stone age, who were con-

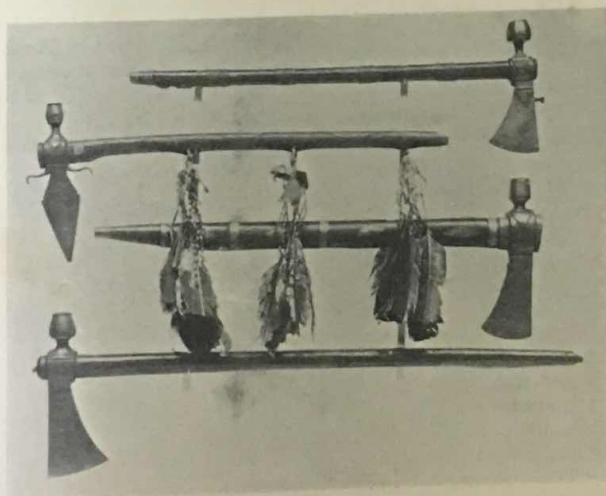


FIG. 2.—TOMAHAWK PIPES  
(In the British Museum)

NORTH AMERICAN INDIAN































































































































A WINDOW IN A CARVED HOUSE AT WHAKAREWAREWA.

### New Guinea

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MAORI CARVINGS

FROM DRAWING

ART IN BRITISH NEW GUINEA.—BY C. PRÆTORIUS, F.S.A.

THOSE unacquainted with the conditions of Papuan life might imagine the inhabitants of British New Guinea free from anxieties, leading a lazy existence in a beautiful country, with the occasional excitement of fights with neighbouring tribes, followed by feasting. Notwithstanding the open-air savage life, the Papuan is a restless sleeper.

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3







FROM A DRAWING BY C. J. PRAET



FROM A DRAWING BY C. J. PRAET

### *Art in the Solomon Islands*

ART IN THE SOLOMON ISLANDS. BY C. PRAETORIUS, F.S.A.

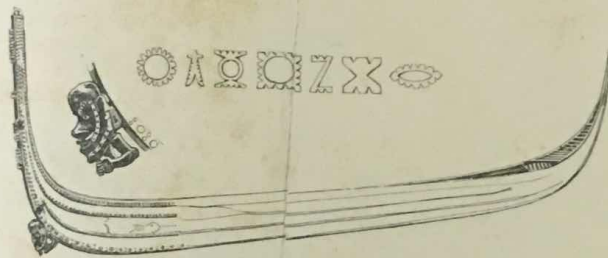
THE hostility of a few coast tribes in the Solomon Islands has, to some extent, been overcome by the good influence of missionaries and traders.

In the larger islands there are vast tracts of the interior inhabited by fierce, treacherous tribes, who forbid all approach; unceasing hostility exists between the bush tribes and the natives who live on the coast, and the only safe places for bush people to live in are the summits of hills, or high on the mountain sides.

Many villagers live in a state of terror, knowing that any day may see an attack and wholesale murder, to supply the material for the cannibal feast. The successful raids of chiefs in the Island of San Cristoval cause the neighbouring villages continual uneasiness.

With the less bloodthirsty tribes a white man, having pipes and tobacco, can generally make friends; however, when a friendly native makes a gift, it is understood that he is to receive an equivalent, and "tambak," as he pronounces it, is a useful form of currency.

The Solomon Islanders wear little clothing, their



CANOE FROM RUBIANA LAGOON

only garment being a piece of matting fastened round the waist. The hair is often stained yellow, white, or red, while a process of bleaching is practised, as with the Fijians.

Owing to the heavy rainfalls, the atmosphere is humid, and the monsoon causes an enervating season. To a traveller these evils are fully compensated for by the magnificent views of huge mountains with peaks which pass through the clouds; high up on the mountain sides live natives, who have not yet seen white men.

Of all islanders in the South Pacific, the people of the Solomon Islands excel in the building and decorating of canoes; they are quite the best built by what we call a savage people. The graceful lines and appropriate decoration of a large war-canoe, manned by eighteen paddle-men, is evidence of a sense of savage pageantry. The small details in the ornament on the canoe, and the graceful lines of the whole structure, are of good design. A new war-canoe, which often takes two years to build, is not considered invested with mana, i.e. supernatural power, until some unfortunate man has been killed by the crew; any wanderer is hunted down and murdered for the purpose, and white men have occasionally been the victims of these canoe inauguration expeditions.

Dug-out canoes are rarely seen in the Eastern Islands of the Solomon group, but are met with only on creeks or sheltered waters. The best canoes are all built, and no outrigger is used. The small canoe in common use by the natives



PREPARED HUMAN SKULL FROM RONONGO ISLANDS









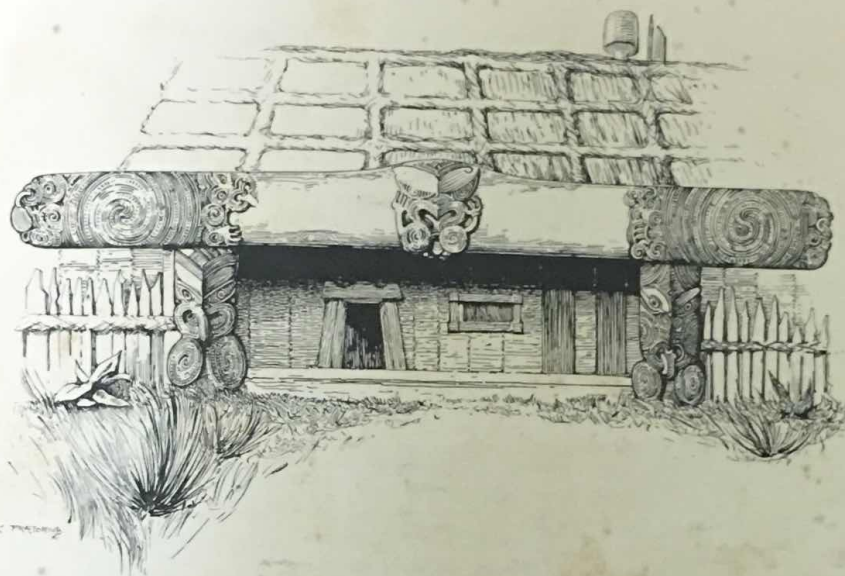
*Relics of Bronze Age.*



*Relics of Stone Age.*



### Maori Houses



DWELLING HOUSE AT RAROERA.

FROM A DRAWING BY C. J. PRÆTORIUS

opposition to "the ethics of the rectory parlour set to sweet music," and "the everlasting glorification of domestic sentiment in blameless princes and others," is generally admitted; but, for all that, the excessive manliness of his rough-cast greatness helped to renew and vivify the enervated English genius.

To-day, as a rule, the tendency of art is the reverse of what it was when Tennyson sang and Burne-Jones painted. Indeed, the most gifted of the younger men are inclined to lose sight of the fact, already stated, that masculine vigour is always most attractive in art when it is tempered by feminine gentleness or grace.

Now, it is this dual quality, this manliness of strength transfigured by feminine grace, that gives so much distinction and charm to Mr. Frampton's *St. Mungo as Patron of the Arts*. When this group has been cast in bronze and placed in the great lunette above the entrance to the Art Gallery, it ought to be an invaluable lesson to all students, more especially to those who are unduly fascinated by the neuter style of Beardsley.

The group of *St. Mungo* is not the only work that Mr. Frampton has done for the Art Gallery at Glasgow. He has designed four large and important spandrils—two for the archway above the

main entrance, and two for the arches of the returns. These latter spandrils, in the illustrations on page 14, are shown *in situ*, as carved in grit stone, or coarse sandstone, from the models prepared by Mr. Frampton. They represent *Love Teaching Harmony to the Arts*, and *The Industries of Glasgow at the Court of Mercury*. The standing figures are 8 ft. 6 ins. high. All are happily characteristic of the sculptor's manner; and it will be noted that the little figure of Love is charmingly boyish and ingenuous, and, again, that the lines are everywhere composed so as to contrast effectively with those of the surrounding architecture.

As for the other spandrils, their graceful figures represent the British Colonies and dependencies in the act of saluting the Arms of Glasgow. Let Glasgow flourish! since the well-being of the whole Empire is dependent on the prosperity of such great radial centres of industry and learning.

W. S. S.

**M**AORI HOUSES. WRITTEN AND ILLUSTRATED BY C. J. PRÆTORIUS.

THE ornamentation lavished upon the domestic and other buildings of the Maoris is one of the





























PHOTOGRAPH, FIELD MUSEUM OF NATURAL HISTORY  
**MOST ARTISTIC HOUSE** in Kano, a large town in Northern Nigeria, West Africa. The ornament is made by men who mold the wet clay with their hands



Dinga took great pride in these family drums of his—made of hollowed tree trunks, carved and spanned with antelope skin—which he only was allowed to play. When the Esu people danced, the Esu drums furnished a throbbing accompaniment



































































